

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 February 2005 (03.02.2005)

PCT

(10) International Publication Number
WO 2005/009335 A2

(51) International Patent Classification⁷: **A61K**
(21) International Application Number:
PCT/US2004/012441
(22) International Filing Date: 22 April 2004 (22.04.2004)
(25) Filing Language: English
(26) Publication Language: English

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.

(30) Priority Data:
60/464,456 23 April 2003 (23.04.2003) US
(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/464,456 (CIP)
Filed on 23 April 2003 (23.04.2003)

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): VANDERBILT UNIVERSITY [US/US]; Box 6009, Station B, Nashville, TN 37235 (US).

Published:

— without international search report and to be republished upon receipt of that report

(72) Inventor; and
(75) Inventor/Applicant (*for US only*): DENISON, Mark [US/US]; 2509 Barton Avenue, Nashville, TN 37212 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(74) Agent: HIGHLANDER, Steven, L.; Fulbright & Jaworski, LLP, 600 Congress Avenue, Suite 2400, Austin, TX 78701 (US).

(54) Title: LIVE ATTENUATED NIDOVIRUS VACCINES

(57) Abstract: The present invention is directed live, attenuated Nidovirus vaccines, and in a particular embodiment, to coronavirus vaccines. The vaccine comprises a viral genome encoding a replicase polyprotein having at least one proteinase cleavage site that exhibits reduced or no cleavage. Such viruses show reduced



WO 2005/009335 A2